

Mortality Report for Persons in Montana Receiving Developmental Disabilities Services 2010 through 2014

Introduction

At least quarterly, the Mortality Review Work Group reviews deaths of persons receiving Developmental Disability Services. The Work Group reviews those deaths that involve persons in the Montana Developmental Center; in community-based settings funded by a Medicaid Home and Community Based Waiver Program; and in community based settings funded by the Developmental Disabilities Program (DDP) if an employee paid by DDP is on the premises. These reviews include looking at the circumstances leading up to any deaths as well as circumstances leading up to hospitalizations and subsequent deaths. We also gather data or review cases of other persons with developmental disabilities not currently funded by DDP whose deaths are referred to the Work Group.

The purpose of these reviews is to be able to analyze trends in mortality as a component of health and safety oversight for a publicly funded developmental disabilities services system. The information gained from these reviews is used to identify trends, help direct training and education needs, and to provide information to service providers regarding prevention and best practices.

Montana is a state with relatively low numbers of persons in services meeting the requirements for mortality review thus making it difficult to detect trends and be confident in their statistical significance even when detected. For this reason, data over 5 calendar years, 2010 through 2014, has been compiled. This data reflects the cases of persons ages 18 and older reviewed or presented to the Mortality Review Work Group, not the total number of deaths in the state each year.

The Numbers

Deaths Reviewed by Mortality Review Work Group 2010 through 2014

| Year | Number of deaths reviewed |
|------|---------------------------|
| 2010 | 16 |
| 2011 | 22 |
| 2012 | 17 |
| 2013 | 19 |
| 2014 | 26 |

The following table shows data regarding the age of death for cases reviewed during the calendar years 2010 through 2014. This data includes the age range, mean and median ages, as well as gender.

Age at Death for Cases Reviewed 2010 through 2014

| Age | 2010 | 2011 | 2012 | 2013 | 2014 | 5 yr. totals |
|-------------------------------|-------|-------|-------|-------|-------|--------------|
| 18-29 | 3 | 3 | 2 | 1 | 2 | 11 |
| 30-39 | 1 | 5 | 5 | 1 | 1 | 13 |
| 40-49 | 4 | 3 | 3 | 1 | 3 | 14 |
| 50-59 | 4 | 6 | 2 | 7 | 11 | 30 |
| 60-69 | 4 | 5 | 3 | 6 | 5 | 23 |
| 70-79 | 0 | 0 | 2 | 2 | 4 | 8 |
| 80+ | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 16 | 22 | 17 | 19 | 26 | 100 |
| Median | 50.5 | 50 | 45 | 59 | 54 | 50.5 |
| Mean(avg.) | 48.0 | 46.5 | 46.8 | 56.4 | 54.3 | 50.4 |
| Age range | 22-69 | 23-68 | 23-74 | 18-84 | 22-75 | 18-84 |
| Gender Male/female | 6/10 | 12/10 | 9/8 | 7/12 | 14/12 | 48/52 |

The average age of death for the 5 years (2010 through 2014) ranged from 46.5 years to 56.4 years with a five-year average of 50.4 years. This is not much different from our previous data that covered the years 2007 through 2011. For those five years, the average age of death ranged from 43 to 61.4 with a five-year average of 51.8 years.

The average age of death for the entire population of Montana from all causes is 73.5 years. The national life expectancy for the general population in 2013 was 78.8 years (81.2 years for females, 76.4 years for males).

Comparisons:

The mortality reports from three states were reviewed for comparison. The average age of death for Montana over the five year period reviewed was equal to the average age of death for Ohio in 2011 at 50.4 years. Connecticut and Massachusetts have a higher average age of death at 60.8 and 61 years respectively.

Average age of death comparison among four states

| State | Data year(s) | Average age of death (years) |
|---------------|--------------|------------------------------|
| Connecticut | FY2012 | 60.8 |
| Massachusetts | 2010 & 2011 | 61 |
| Ohio | 2011 | 50.4 |
| Montana | 2010 – 2014 | 50.4 |

Causes of death:

Detailed Causes of Death for Cases Reviewed 2010 through 2014

| Cause of death | 2010 | 2011 | 2012 | 2013 | 2014 | 5 year totals |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|---------------|
| Pneumonia | 2 | 8 | 3 | 9 | 13 | 35 |
| Cancer* | 4 | 3 | 2 | 0 | 5 | 14 |
| Seizure | 1 | 0 | 4 | 2 | 3 | 10 |
| Heart disease/ heart failure | 3 | 0 | 2 | 1 | 2 | 8 |
| Sudden death (respiratory/cardiac) | 2 | 0 | 0 | 3 | 0 | 5 |
| Asphyxia | 0 | 1 | 0 | 2 | 0 | 3 |
| Stroke | 0 | 3 | 0 | 0 | 0 | 3 |
| Gastrointestinal bleed | 0 | 1 | 1 | 1 | 0 | 3 |
| Natural | 0 | 2 | 1 | 0 | 0 | 3 |
| Pulmonary Embolism | 1 | 1 | 1 | 0 | 0 | 3 |
| Congenital disease or condition* | 1 | 0 | 1 | 0 | 0 | 2 |
| COPD | 0 | 1 | 0 | 0 | 1 | 2 |
| Infection/sepsis* | 1 | 0 | 0 | 0 | 1 | 2 |
| Failure to thrive | 0 | 0 | 1 | 1 | 0 | 2 |
| Anaphylaxis | 1 | 1 | 0 | 0 | 0 | 2 |
| Multisystem organ failure | 0 | 1 | 0 | 0 | 0 | 1 |
| Parkinson's | 0 | 0 | 0 | 0 | 1 | 1 |
| Unknown | 0 | 0 | 1 | 0 | 0 | 1 |
| TOTAL | 16 | 22 | 17 | 19 | 26 | 100 |

*Explanations

Cancer types include: breast, gastric, pancreatic, colon, liver, lung, melanoma, lymphoma, ovarian, uterine, metastatic with unknown primary, and renal cancer

Congenital condition or disease includes: Sanfilippo syndrome and ventriculoseptal defect

Infection includes: peritonitis and UTI

For three of the five years reviewed, pneumonia was the leading cause of death. It was the leading cause of death in 2008 and 2009 and overall pneumonia remains the leading cause of death for persons receiving Developmental Disabilities Services. Most cases of pneumonia were due to aspiration and were not counted separately from other pneumonias for this review. Cancer, seizures, heart disease, and sudden death from cardiac or respiratory failure are the next 4 causes of death.

For the general population of Montana, cancer, heart disease, chronic respiratory disease, strokes, and accidents are the five leading causes of death.

Comparisons:

Below is a comparison of the leading causes of death in 3 other states. Montana differs from those states substantially by having pneumonia as the leading cause of death compared to heart disease which was reported by the other three states.

Comparison of leading causes of death among four states

| | Connecticut | Ohio | Massachusetts | Montana |
|---|------------------------------|------------------------------|---------------|-----------------|
| 1 | Heart disease | Heart disease | Heart disease | Pneumonia* |
| 2 | Pneumonia* | Pneumonia* | Cancer | Cancer |
| 3 | Other respiratory diseases** | Other respiratory diseases** | Alzheimer's | Seizures |
| 4 | Cancer | Cancer | Pneumonia* | Heart disease |
| 5 | Sepsis | Sepsis | Sepsis | Sudden death*** |

*includes aspiration pneumonia

** COPD, emphysema, etc.

***Sudden death refers to sudden cardiac or respiratory failure

Summary:

Due to the relatively small numbers and also the differences in reporting among the states, this data may not be statistically significant. However it provides information that should be taken into consideration as we attempt to improve the care given to the persons receiving Developmental Disabilities Services in Montana.

Aspiration and other pneumonias remain our number one problem to recognize and attempt to prevent. There are things that we can do to lower the incidence of aspiration and chronic lung problems due to aspiration. Training is a key component in this endeavor. This training should include such things as proper positioning, recognizing and reporting problems, and seeking evaluation in a timely manner.